Air Resources Board

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Linda S. Adams
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May 29, 2009

The Honorable Steven Chu
United States Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Secretary Chu:

Thank you for the opportunity to meet with you on May 19, 2009, in Washington, D.C. to discuss hydrogen and fuel cell vehicles (FCVs) and their potential role in our clean energy future. I am hopeful that we can work together with your agency to advance this promising low-carbon technology.

In our discussion, you brought up several issues that I have asked my technical staff to take a look at including the status of fuel cell system costs, hydrogen production costs and lifecycle emissions, and hydrogen storage. Details are provided in the attached document. In summary:

1. While low-volume prototype vehicle costs are very high, fuel cell systems are fast approaching cost-competitiveness with advanced hybrid vehicles and are expected to be cheaper than plug-in hybrid electric vehicles when produced in volume.

2. Hydrogen from natural gas and used in an FCV can reduce greenhouse gas emissions by 63% compared to today's vehicles and 37% compared to natural gas vehicles. Hydrogen from cellulosic biomass can reduce emissions by nearly 90% compared to today's cars and 63% compared to plug-in hybrid vehicles using cellulosic ethanol and electricity from the national grid.

3. Hydrogen used in an FCV can be cost-competitive when produced in volume from a wide variety of low-carbon pathways including natural gas, biomass, renewable electricity, and coal with sequestration. Infrastructure costs can be minimized and customer fueling availability maximized through a coordinated roll-out of stations in concentrated regions.

4. While advances in hydrogen storage would be helpful, when designed into the vehicle, compressed hydrogen storage using tanks at pressures of 35 or 70 MPa are sufficient to safely provide adequate customer range, passenger, and cargo space.

The bottom line is that all of these issues can be readily overcome with continued investment in RD&D and coordinated deployment of hydrogen infrastructure – no miracles are required. Ultimately the market will decide the winners, and private capital will fund the transition, but given the importance to our shared energy and climate future, we should continue to nurture the most promising alternatives.

I also want to reiterate my request from my April 1 letter (enclosed) to have a meeting between our respective technical staff along with the several automakers pursuing fuel cell vehicles. Only through continued dialog and investigation will we be able to determine the best path forward and I look forward to continuing the conversation.

Mary D. Nichols
Chairman

Enclosures (2)

cc: Carol Browner, White House
Nancy Sutley, Council on Environmental Quality